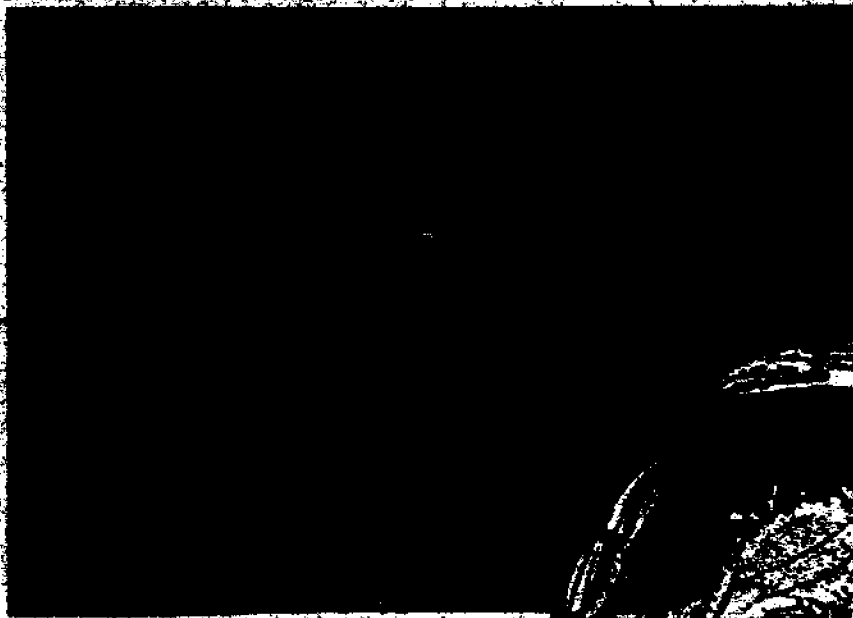


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# MARKET NEEDS LOAN COPY ONLY OF CRABMEAT DEALERS

## *Implications for Maryland's Crab Processing Industry*



By Douglas Lipton and  
Susan Keilholz



A Maryland Sea Grant Institution  
College Park, Maryland

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# **MARKET NEEDS OF CRABMEAT DEALERS**

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## ACKNOWLEDGEMENTS

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## BACKGROUND

The Chesapeake Bay region has long been the leader in the United States crabmeat market. In recent years, other states besides Maryland and Virginia have played an increasing role in this market. Important producers include North Carolina, Florida and Louisiana. In addition, imported crab products from Venezuela and Mexico have supplemented domestic production, while looming on the horizon is the vast crabmeat production potential in Asia.

Increased competition has forced Maryland and Virginia producers to seek ways to differentiate their product from other producers in order to maintain higher price levels. Just what attributes of Chesapeake Bay crabmeat products are important to dealers in the northeast was the subject of a survey we conducted in 1992. In addition, we conducted a survey of Maryland crabmeat processors in the summer

of 1992 to determine their opinions on the major problems facing their industry.

The results indicate that crabmeat dealers are most interested in consistent quality so that the label on a container accurately describes the product inside. These dealers were less concerned with where the product comes from or how the meat is cooked, than that the product be graded correctly, have a long shelf-life and be free of shell fragments. The survey of Maryland crab meat processors indicates more of a primary concern with keeping competition out of the state than ensuring a higher quality product. In addition, they are relatively less concerned with consistent accurate grading — of major interest to dealers — than they are with freshness dating and tamper-proof containers — of secondary interest to dealers.

## CRABMEAT DEALER SURVEY

A survey instrument (see Appendix), designed with suggestions from Maryland crab processors and the Maryland Office of Seafood Marketing, listed six attributes that were felt to be important to the crabmeat dealer: (1) method of cooking; (2) grade of crabmeat; (3) level of processing; (4) inspection; (5) source of product; and (6) quality.

It was assumed that the first five attributes were indicators of the sixth, quality. Survey respondents were asked to rank, on a scale of 1 to 5, the importance of each of the first five attributes in their purchasing decision (Figure 1). They were also asked to rank the different levels that the attributes could attain. For example, under method of cooking, they ranked the importance of how crabmeat was cooked for making their purchasing decision. They then ranked how they felt about the two cooking methods, boiling and steaming. We also collected infor-

mation on the types of businesses the dealers represented and the volume of crabmeat they dealt in.

To conduct the survey, lists were generated of crabmeat dealers in the states of Connecticut, Delaware, Maryland, Massachusetts, New Jersey and New York. Dealer names were compiled from *Who's Who in the Fish Industry*, 1992 (Uner Barry Publications). A total of 101 surveys were mailed to the dealers in June, 1992. We then telephoned as many of the dealers as possible to conduct the survey. Fifty-seven surveys were completed by this method, a 56% response rate.

### Method of Cooking

Crabs, which are cooked prior to extraction of the meats, are either steamed under controlled temperature and pressure for a specific

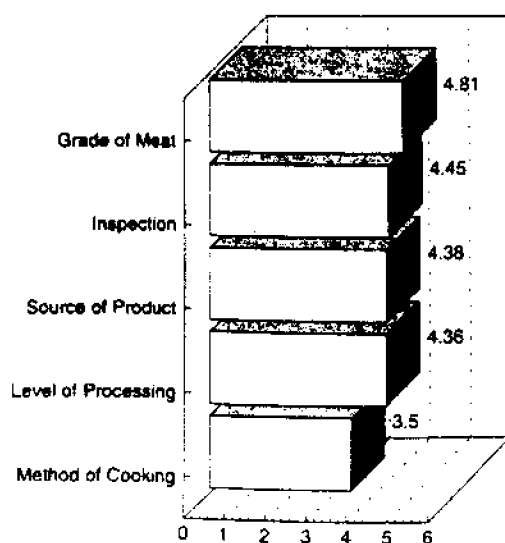


Figure 1. Ranking of attributes by crabmeat dealers.

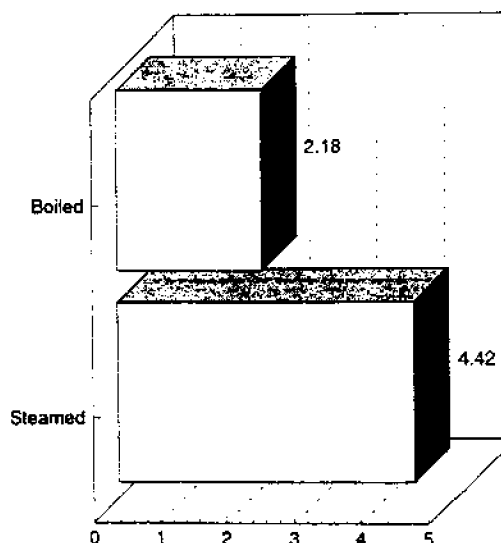


Figure 2. Dealer preferences on how the crabmeat should be cooked.

period of time or they are boiled. Many Maryland processors claim that boiling adds moisture to the product, so that the consumer ends up paying a higher price for less crabmeat. When the dealers were asked to rank their preferences for boiled or steamed crabmeat, they clearly preferred the steamed product (Figure 2). However, when asked to rank the importance of how the product is cooked in relation to other attributes, cooking method was the least important of the five attributes, with a score of only 3.5 out of 5.

### Grade of Crabmeat

Crabmeat is graded as jumbo lump, lump, backfin, special and claw; grading practices, however, are very loose and depend on the practices of individual processors. Our survey limited dealer choices to lump, backfin and special. When asked which product they prefer to sell, their responses were precisely in the order of perceived product quality, from the highest — lump meat — to the lowest — special (Fig-

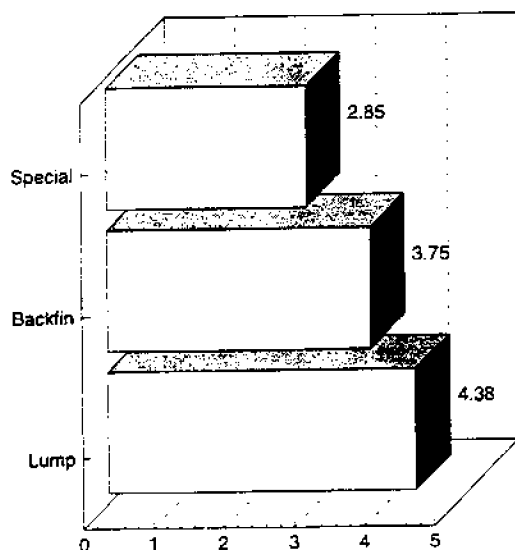


Figure 3. Dealer preferences on type of crabmeat they prefer to sell.

ure 3). In other words, dealers said they preferred to sell lump over backfin while special was the least preferred. In retrospect, dealers might not have been clear about what we were trying to get at in this question: it would have been perfectly reasonable for them to prefer selling the lower quality special crabmeat if they could make their greatest profit on this product.

Dealers did indicate that the grade of meat was the most important attribute in their purchasing decision. This is not surprising given that the type of meat is the most prevalent descriptor of the product presented to the consumer. Perhaps the most important lesson from the dealers' response to this question is the critical importance for providing the type of meat listed on the label. In our informal discussions with dealers, they most often cited mislabeling or inconsistent grading as a problem.

### Level of Processing

After the crabmeat is packaged into containers, it is sold fresh, pasteurized or frozen. Dealers were asked to rank these different product forms; as expected, they ranked fresh as the preferred product (Figure 4). Frozen crabmeat was the least preferred and received the second lowest ranking of any of the attributes presented. Pasteurized crabmeat was ranked closer to fresh than to frozen. The level of processing was the least important attribute in the dealers purchasing decision.

### Inspection

Although seafood processing plants must meet state and federal health standards, enforcement and inspection may vary from state to state. Though there is a voluntary federal inspection program, most plants do not participate. Dealers ranked some form of seafood inspection as the second most important of the

attributes presented. When asked to rank four different inspectors — the United States Department of Agriculture (USDA), National Marine Fisheries Service (NMFS), Food and Drug Administration (FDA) and a generic state health inspection program — they greatly preferred USDA inspection followed by state health inspection, with the least preference given to NMFS and FDA (Figure 5).

### Source of Product

Most crabmeat-producing states have seafood marketing programs claiming their product to be the best. We presented the dealers with a list of four states for the choice of imported crabmeat and asked them to rank each from 1 to 5. To keep the survey short, we did not include all the producing states. The order of ranking from most to least preferred was Maryland, Virginia, Louisiana, North Carolina and imported (Figure 6). Maryland had the highest ranking of any attribute, other than the direct quality measures discussed below, while imported crabmeat had the lowest ranking. The spread in rankings may be partly due to survey design, in that this category had more items to rank than the others. The high score for Maryland is not surprising but might be slightly overstated; this is because we told the respondents that the University of Maryland was conducting the study, and some may have biased their response to Maryland crabmeat as a result by giving it a higher rating.

Dealers ranked product source in their purchasing decision as a 3 out of a possible 5, and only a hundredth of a point above the fourth-ranked attribute. Apparently, state ori-

gin is only important if it implies something about the crabmeat in the package. The stronger the link between the source and overall quality, the greater the dealer preference for the regional product.

### Quality

We did not feel it useful to ask the dealers to rank the importance of quality, though we did ask them to rank different aspects of quality. The factors we asked them to rank were: presence of shell in the meats; shelf life; consistent grading; tamper-evident containers; and a code/freshness date. Consistent grading had the highest ranking of any attribute, followed closely by shelf life and presence of shell fragments (Figure 7). Code/freshness dates and tamper-evident containers were not as important to these dealers.

### Summary of Dealer Preferences

When we weighted attributes by their importance rankings, the best product to present to our sample of dealers in the northeast was crabmeat with the following characteristics in order of importance: lump, Maryland, fresh, USDA inspected and steamed (Figure 8). The worst product to present is: imported, NMFS or FDA inspected (not inspected was not an option and would presumably fare worse), special, boiled and frozen (Figure 9). However, dealers made it clear that the crab processing industry could best satisfy them by producing a consistently graded product that is reasonably free of shell fragments and has a long shelf life.



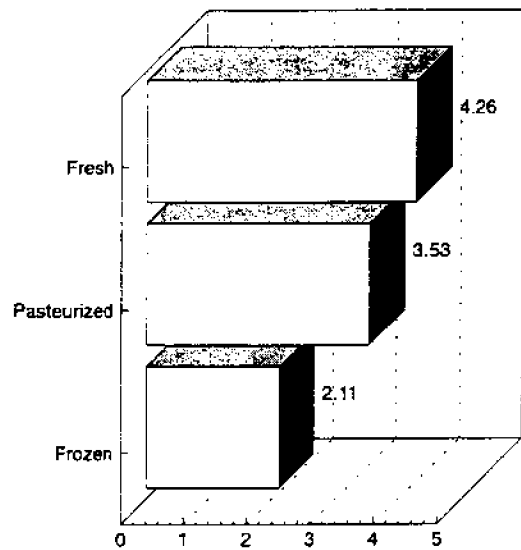


Figure 4. Dealer preferences on the preferred form of processing.

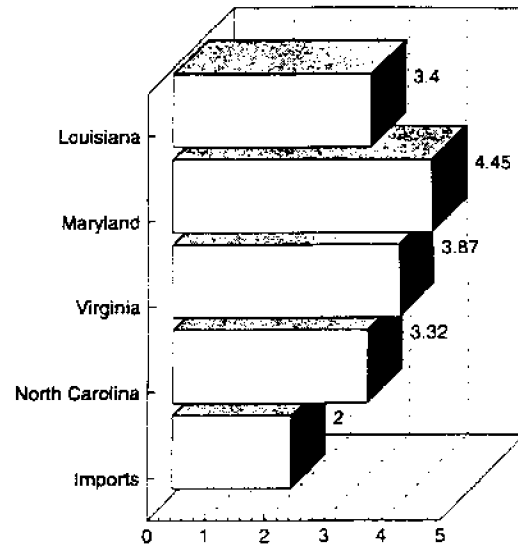


Figure 6. Dealer preferences for crabmeat by producing region.

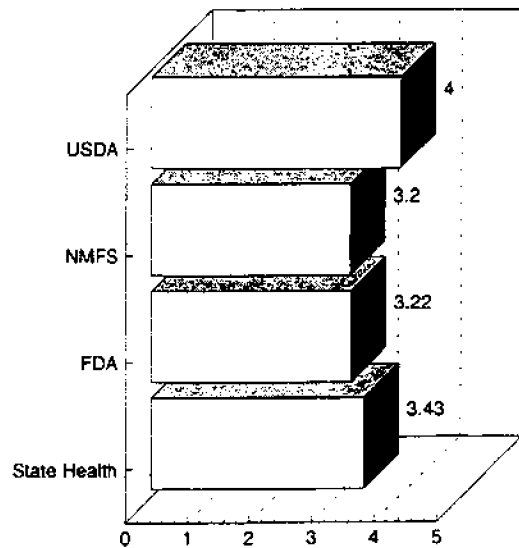


Figure 5. Dealer preferences on type of inspection.

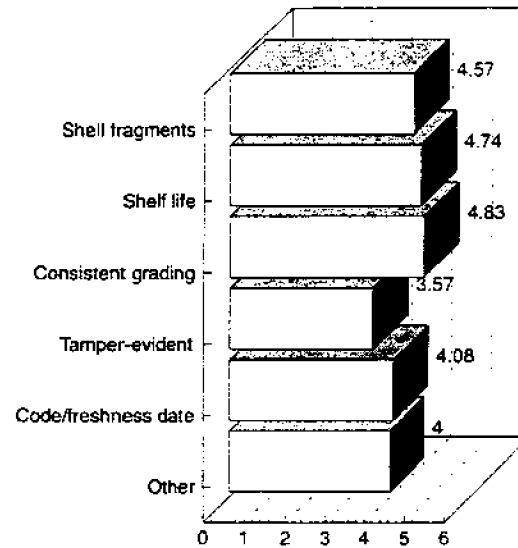


Figure 7. Quality assurance factors most important to dealers.

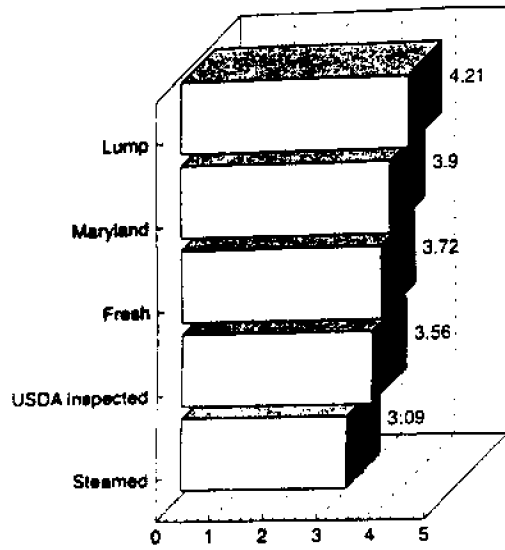


Figure 8. Best product for dealers with weighted attributes.

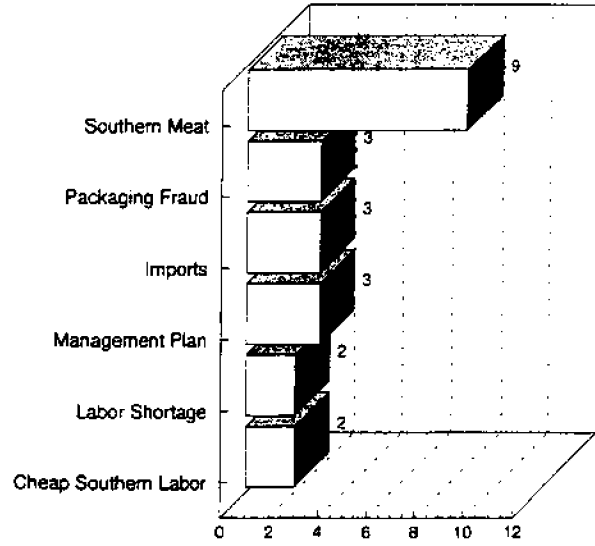


Figure 10. Perception of industry threats from survey of Maryland crabmeat processors.

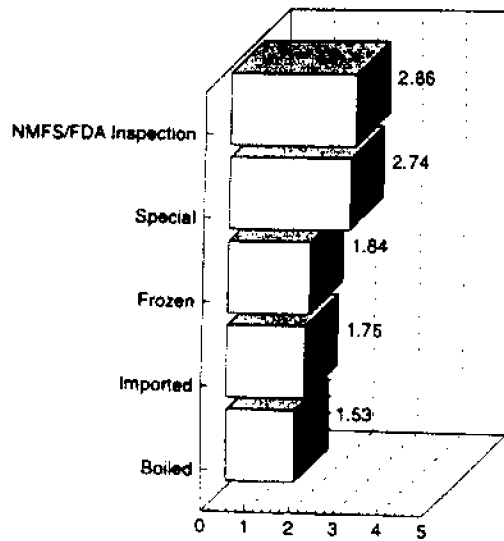


Figure 9. Worst product for dealers with weighted attributes.

## MARYLAND PROCESSORS SURVEY

Given the preferences of crabmeat dealers in the northeast, it is useful to examine the results of a survey of Maryland crabmeat processors. Conducted by the Maryland Office of Seafood Marketing, and coordinated with the dealer survey, the survey of processors was extensive, with over 90 possible responses to questions. It was mailed to all 50 crabmeat processors in the state, with follow-up phone calls urging return of the completed forms; 17 responses were received. Only questions related to the analysis of dealer preferences are reported on here.

### Perceptions of Problems and Threats

In an open ended question about the major problems or threats to the health of the blue crab industry, most Maryland crabmeat processors referred to competition from southern producers (Figure 10). Competition from imports, packaging fraud and the blue crab management plan were each mentioned by three processors as being a threat. Maryland processors feel they are at a disadvantage in the marketplace because southern processors have lower labor costs, less stringent regulations, a larger labor supply and lower prices for live crabs (Figure 11).

### Actions that Processors Favor

Given their perception that they are at a disadvantage compared with southern processors, Maryland processors were asked what kind

of response they would like to have enacted. Specifically, they were asked if they would favor some restriction on the sale of boiled crabmeat in Maryland. The Maryland Department of Health currently does not allow Maryland processors to boil crabs prior to picking; however, boiled crabmeat produced outside of Maryland can be sold in the state. While there was some inconsistency in the response to this question, only 13% said they would favor a continuation of the current policy (Figure 12). The remainder either want a seasonal or total ban on boiled crabmeat, while 88% percentage want to have boiled crabmeat labeled as such. Despite the strong industry support for some kind of ban on the sale of boiled crabmeat, it is doubtful that such a ban is feasible or legal.

### Consumer Concerns

The Maryland crabmeat processing industry is generally lukewarm to addressing the major concern of their customers, consistent product grading: only 19% of the respondents were in favor of a mandatory grading system, while 56% percent would favor a voluntary grading system (Figure 13). The support for a voluntary grading system is much less than for limits to competition from southern producers (Figure 12). Processors also show greater support (56%) for freshness dating and tamper evident containers than they do for consistent and universal grading standards (43%) (Figure 14).

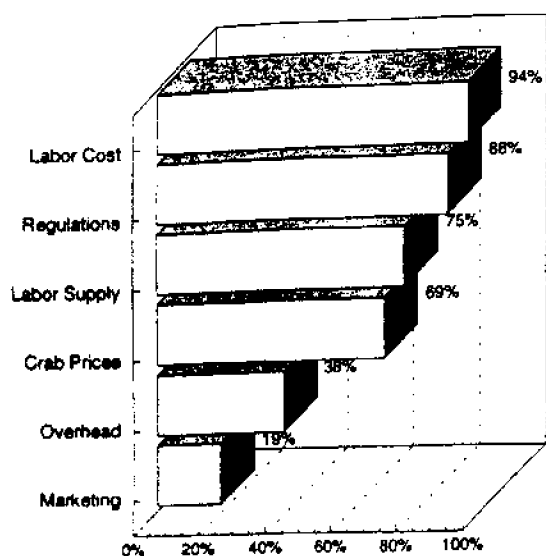
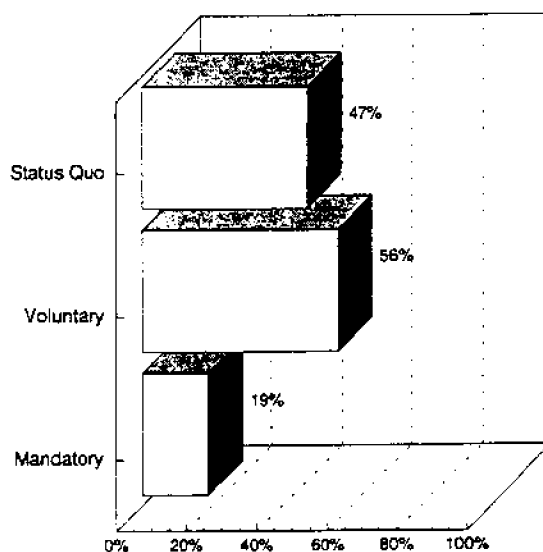


Figure 11. Perceptions of Maryland crabmeat processors about the advantages of southern processors.



\* Some respondents were inconsistent, answering that they were for maintaining the status quo and for adopting mandatory or voluntary practices.

Figure 13. Percentage of Maryland crabmeat processors indicating support for action on grading practices.

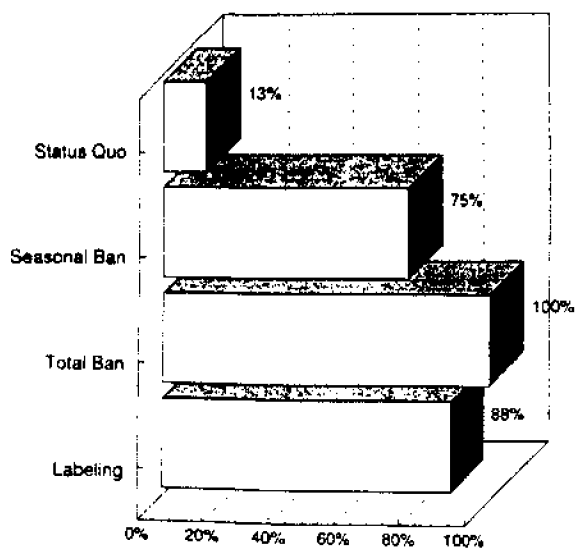


Figure 12. Percentage of Maryland processors favoring a response by the state to the sale of boiled crabmeat.

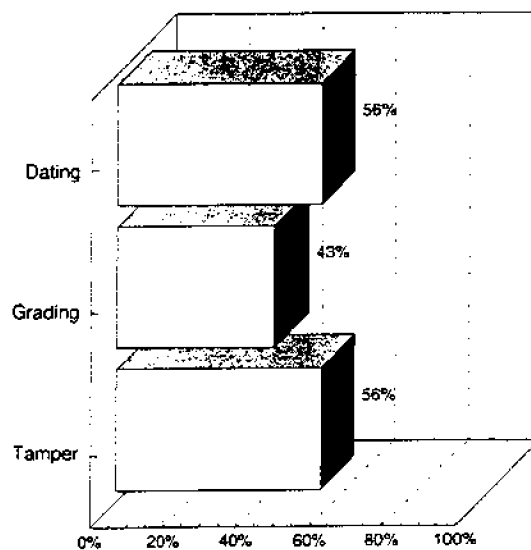


Figure 14. Percentage of Maryland processors supporting industry responses to consumer concerns about crabmeat.

## SUMMARY AND RECOMMENDATIONS

Maryland's crab processing industry is fully aware of the competitive threat they face from Southern crabmeat processors, and the potential threat from crabmeat processed in Asia and Central and South America. Nevertheless, little can be done to limit the competition. Even if Maryland could ban the sale of boiled crabmeat, this ban would only affect a small part of the northeast market.

The focus for improving sales of Maryland crabmeat should be on marketing of product. Maryland can improve sales if dealers associate the Maryland product with consistent grading, long shelf life and few shell fragments in the meat. Although Maryland does have one of the best reputations for producing quality products, the lack of grading standards allows

a few poor quality producers to diminish the reputation of the state's processors as a whole. This is one area in which the Maryland producers can act to distinguish their high quality product from that of other producers. The concept of a "Maryland Pack" has been put before the industry before: this entails the adoption of measurable and enforceable quality standards coupled with product labelling that ensures dealers and other purchasers a high quality product. This study demonstrates that adoption of a well designed "Maryland Pack" program has the potential to positively influence buying decisions of Maryland crabmeat relative to competing products from other states and countries.

## APPENDIX

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### CRABMEAT BUYERS SURVEY

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#### Attribute 1. Cooking Procedure

How important in your purchasing decision is how the crabs are cooked prior to picking. Use a scale of 1-5 with 1 being not very important and 5 being very important:

\_\_\_\_\_ (1-5)

Please rank the following cooking procedures on a scale of 1-5 (5 being the best), you may rank procedures equally:

Boiling \_\_\_\_\_ (1-5)

Steaming \_\_\_\_\_ (1-5)

#### Attribute 2. Type of Crabmeat

There are many market categories of crabmeat (e.g., jumbo lump, special, etc.). How important in your purchasing decision is the market category designation (1 is not very important, and 5 is extremely important:

\_\_\_\_\_ (1-5)

We are asking you to rank three types of crabmeat, for your purposes, which is the best type (rank on a scale of 1-5):

Backfin \_\_\_\_\_ (1-5)

Special \_\_\_\_\_ (1-5)

Lump \_\_\_\_\_ (1-5)

#### Attribute 3. Alternative Packs

How important is it to you that the crabmeat you purchase be fresh pack rather than pasteurized or frozen. If you do not care at all, rank it at 1, if it is very important one way or the other rank at 5: \_\_\_\_\_ (1-5)

Now rank from 1-5 which product you prefer to buy and sell:

Pasteurized \_\_\_\_\_ (1-5)

Fresh \_\_\_\_\_ (1-5)

Frozen \_\_\_\_\_ (1-5)

#### Attribute 4. Inspection for Wholesomeness

How important on a scale of 1-5 is it to you in your purchasing decision that the crabmeat you purchased has been inspected for wholesomeness: \_\_\_\_\_ (1-5)

Please rank the following inspectors:

USDA \_\_\_\_\_ (1-5)

National Marine Fisheries Service \_\_\_\_\_ (1-5)

FDA \_\_\_\_\_ (1-5)

State Health Inspection \_\_\_\_\_ (1-5)

Attribute 5. Source of Product

How important is the state or country where the crabmeat is processed to you in your purchasing decision (1-don't care, 5-very important): \_\_\_\_\_(1-5)

Please rank the following areas that produce crabmeat (5 being the best)

Louisiana	_____ (1-5)
Maryland	_____ (1-5)
Virginia	_____ (1-5)
North Carolina	_____ (1-5)
Imported	_____ (1-5)

Attribute 6. Quality

Obviously, product quality is an important component of your purchasing decision. Please rank the following as to which deserves the most attention from the crabmeat processing industry. Rank it 1 if it requires little attention and 5 if it requires the highest attention. You may rank items the same.

shell fragments	_____ (1-5)
shelf life	_____ (1-5)
consistent grading	_____ (1-5)
tamper-evident containers	_____ (1-5)
code/freshness date	_____ (1-5)
other (list _____)	_____ (1-5)

7. Type of Sales

Which best describes your business

- a) retail chain store \_\_\_\_\_
- b) restaurant supplier \_\_\_\_\_
- c) wholesaler \_\_\_\_\_
- d) other (list \_\_\_\_\_)

8. Quantity of Sales (All data is confidential, and will only be released as aggregate summaries)

How many pounds of crabmeat do you buy/sell in a week during the peak season.

- a) \_\_\_\_\_ < 1,000 lbs.
- b) \_\_\_\_\_ 1-5,000 lbs.
- c) \_\_\_\_\_ 5-10,000 lbs.
- d) \_\_\_\_\_ > 10,000 lbs.

That completes our survey. At this time we would like you to suggest other information that might be important to us in understanding how the crabmeat industry can improve how it serves your business and the seafood industry as a whole: \_\_\_\_\_

See Petrucci, C. and D. Lipton. In press. *Warmwater Crab Production in Asia: Implications for the Chesapeake Bay Blue Crab Industry*. Maryland and Virginia Sea Grant.